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ON THE INDUSTRIAL ARTS OF THE ESQUIMAUX.

BY RICHARD KING, M.D.

Of the industrial arts of the Esquimaux, their habitations, in construction and variety of material, display, perhaps, the greatest ingenuity. Their hunting grounds extend about sixty miles inland, but their dwellings are almost invariably raised near the sea-shore, and are either permanent or temporary, the character of them depending upon the locality, and the material at the workman's disposal. But even those who have fixed dwellings leave them in the summer for tents suited to their migratory habits. In Greenland, the permanent house is built with stones, and turf as a substitute for mortar. It is a low hut, not more than two or three yards high, with a flat roof of wood and turf. It has neither door nor chimney, the use of both being supplied by a vaulted passage, made of stone and earth, sixteen or eighteen feet long, communicating with the middle of the house. The floor is divided into apartments, resembling horse-stalls, by skins reaching from the posts that support the roof to the wall. Each family has its separate room, and each room, in front, a window of seal-skin parchment, which is white and transparent, and the ceiling and walls are lined with the same material. In the room beneath the window, attached to the whole length of the wall, is a deal bench, raised half a yard from the ground, and reserved, as we do best rooms, for visitors. A similar bench is attached to the back wall of the room for the use of the family, the bedding consisting of rein-deer skins. These benches are also used as sofas by day, the women sitting in the rear cross-legged like tailors, and the men in front in the sitting position of civilized life.

In Gilbert Sound, instead of the walls being formed of stone, John Davis informs us they are made of wood ; while at Regent Bay, according to Sir John Ross, stone-built houses are used, and the roof, instead of being flat, is arched, and the

floor sunk three feet in the earth, a description which exactly answers for the habitations of the Esquimaux of Labrador. From the Coppermine river along the coast westward, and thence to Prince William Sound, the winter houses are built of drift-wood, which is found along the whole route in more or less abundance. At Norton Sound, a sloping roof without any side walls characterises the building, and instead of raised benches, the floor is formed of logs, the entrance being at one end, with a fireplace just within it, and a small hole for the escape of smoke. From Norton Sound to Point Barrow, the houses vary in their construction according to the nature of the ground and the taste of the inhabitants. Some are wholly above ground, some have the roof scarcely raised above it, and others resemble those of the natives of Norton and Prince William Sounds, but they all agree in being constructed with drift-wood covered with peat, and in having the light admitted through a parchment window in the roof.

They are very comfortable abodes, and now and then of considerable size ; one situated between the Mackenzie and Coppermine rivers, was in the interior found to be a square of twenty-seven feet, having the log roof supported on two strong ridge poles, two feet apart, and resting upon four upright posts ; the floor, formed of split logs, dressed and laid with great care, was surrounded by a raised border about three feet wide, intended for seats ; the walls, three feet wide, were inclined outwards for the convenience of leaning the back against them, and the ascent to the door, which was on the south side, was formed of logs ; the outside, covered with earth, had nearly a hemispherical form, and around its base were arranged the skulls of twenty-one whales. There was a square hole in the roof, and the centre log of the floor had a basin-shaped cavity, one foot in diameter, probably intended for a lamp.

The most extraordinary houses are those constructed of the bones of whales, walruses, and other animals. Sir Martin Frobisher first makes mention of these dwellings as existing at Labrador, and Sir Edward Parry and Captain Lyon afterwards found them in use at Melville Peninsula and Igloodik. They are built circular, and of a dome-like form,

the lower part or foundation being of stones, and the rest of bones, gradually inclining inwards, and meeting at the top ; the crevices, as well as the whole of the outside, are covered with turf, which, with the additional coating of snow in the winter, serves most effectually to exclude the cold air ; they are about seventeen or eighteen feet at the base, and about nine feet in height ; the entrance is towards the south, and consists of a passage ten feet long, and not more than two in height and breadth, built of flat slabs of stone, and externally covered like the hut ; the beds, which are raised, by stones, two feet from the ground, occupy, at the inner end, about one-third of the apartment. Near the huts when they were discovered were large tumuli, formerly dwellings, but then solid moss-covered mounds.

Although during winter the Esquimaux generally occupy permanent dwellings, it not unfrequently happens, from scarcity of provision or some other calamity, that it is necessary for them before spring arrives to seek a new home. When we consider the low temperature of the country, that in many parts it is destitute of wood even for fuel ; that the fixed habitations being cemented together by frost cannot be removed, and that the summer tents, from their construction, are not calculated to resist the cold, we are at first led to suppose that, if driven at the inclement season from his accustomed haunts, death must soon close the sufferings of the poor inhabitant of the North Pole. But this is far from being the case, for these ingenious people have learnt to convert snow into building materials, by which means they can raise an establishment for their families in a few hours ; an establishment which, from the purity of the material of which it is composed, the elegance of its construction, and the translucency of its walls, gives it an appearance far superior to a marble building. " One may survey it," we are told, " with feelings somewhat akin to those produced by the contemplation of a Grecian temple reared by Phidias ; both are triumphs of art inimitable of their kind."*

* Franklin's First Journey.

Having selected a spot where the snow is sufficiently compact, the workmen commence by tracing out a circle of from eight to fifteen feet in diameter, proportioned to the number of occupants the hut is to contain, and then prepare a number of oblong slabs of snow, six inches deep and two feet long, which are tenacious enough to admit of being moved without breaking, or even losing the sharpness of their angles. These slabs, which have a slight degree of curvature corresponding with the circular foundation, are piled upon each other exactly like courses of hewn stone, and care is taken to make them fit closely to each other by running a knife adroitly along the under part and sides, and to cut them so as to give the wall a slight inclination inwards. Tier after tier is thus laid on by one man standing within the wall, who is supplied with material by one or more assistants from without; but for the better convenience of transmitting this supply, when the wall has attained a height of five or six feet, a hole is cut on the south side close to the ground. Thus he continues labouring till he has brought the sides nearly to meet in a perfect and well constructed dome, sometimes nine or ten feet high, which he takes particular care in finishing, by fitting the last block or key-stone very nicely in the centre. The people outside are in the mean time occupied in throwing up snow with the snow-shovel, and stuffing it in where holes have been accidentally left. The builder next proceeds to let himself out by enlarging the hole on the south side in the form of a Gothic arch, intended as a doorway three feet high and two and a half feet wide at the bottom, communicating with which he constructs two passages about twelve feet long and five high, the lowest being that next the hut. The roofs of these passages are sometimes arched, but more generally flat, by slabs laid on horizontally, and the workmen select the building material principally from the spot where the passages are to be made, which purposely brings that part considerably lower than that of the hut.

The work just described completes the walls of a hut, if a single apartment only be required; but if, on account of relationship or from any other cause, several families are to reside under one roof, the passages are made common to all,

and the first apartment, in that case made smaller, forms a kind of ante-chamber, from which the entrance is through an arched doorway, five feet high, into the inhabited apartments. When there are three of these, which is generally the case, the whole building, with its adjacent passages, forms a tolerably regular cross. For the admission of light, a round hole is cut on one side of the roof of each apartment, and a circular plate of fresh water ice, three or four inches thick and two feet in diameter, let into it.* The light is soft and pleasant, like that transmitted through ground glass, and is quite sufficient for every purpose. If fresh water ice is not within reach, melted snow is poured into a vessel and thus frozen into a transparent plate.† The next thing is to raise a bank of snow two feet six inches high, around the interior of each apartment, which forms the bed and fire place, the former occupying the sides and the latter the end opposite the door. One might walk completely over them without suspecting the little hive of human beings that is comfortably established below; but this, however, is not always done with impunity when the thawing within has too much weakened the roofs, in which case a leg sometimes makes its way through, to the no small terror of the inmates; for, when these edifices become surrounded by snow drift, it is only by the windows that they can be recognised as human habitations.

The beds are arranged by covering the snow with layers of small stones, of paddles, tent-poles, and pieces of net-work, made of thin slips of whalebone, or twigs of birch and deer-skins, a bed capable of affording not merely comfort but luxurious repose, in spite of the rigour of the climate.

With the lamps lighted and the hut full of people and dogs, a thermometer placed on the net over the fire indicates a temperature of 38° Fahr.; when removed two or three feet from this situation it falls to 32°, and placed close to the wall stands at 23°, the temperature of the open air at the time being 25° below zero. A greater degree of warmth than this, produces extreme inconvenience by the dropping from the roofs, which is prevented by applying a little piece of snow

* Cartwright.

† Ross's Appendix to Second Voyage.

to the place from which the drop proceeds. By melting and freezing alternately, innumerable icicles are formed on the snow walls, which reflect the light like radiant diamonds.* Although this is very beautiful, it is a source of great trouble to the inhabitants, whose lungs become affected from repeated colds and coughs. For this reason, although the houses are formed of snow, coolness is the object always kept in view; and from the inexhaustible building materials always at hand, but little time and labour is required to effect any alterations or additions that may be requisite for the purpose, as exemplified in the instance of a native of Regent Inlet who had closed in his roof within 45 minutes.†

The interior appearance of these habitations is rendered more beautiful when they are situated on the ice, which, being cleared of snow, presents a flooring of that splendid blue, which is perhaps one of the richest colours in nature. If it should happen that the family is increased by births or by the system of adoption in use amongst them, they have to enlarge their buildings, which they effect by adding another apartment, or by building a more roomy house over the old one, and as it were concentric with it; and when completed the old one is removed from within. The natives of the River Clyde were found by Sir Edward Parry inhabiting a hut partly excavated from a bank facing the sea, and the rest built round with stone; a similar hut is figured in Mr Ellis's work; and Captain Cartwright informs us, that the winter habitations of the natives of Labrador are hollowed out of a drift bank of snow in the form of an oven.

Equal in beauty to the snow-house is that constructed of fresh-water ice. The material is collected in large transparent slabs, arranged in an octagonal form, and the roof formed of walrus skin or snow. These dwellings are so transparent that even at some paces distance it is possible to distinguish those who stand within them; yet they are so completely air-tight as to be perfectly warm.‡

In regard to dress the Esquimaux, in design and execution, may vie with the world, and the civilized traveller would do

* Cartwright.

† Ross.

‡ Lyon.

well to take a lesson from these "children of the chase," for the most accomplished furrier sinks insignificantly before them, so tastefully are the various coloured skins of the country worked by them into articles of apparel. Thus the dark and mottled fur of the seal is placed in the centre of the back or breast of the dress, while the lighter shades are on the sides; in the sleeves the fore and back piece are often of two colours, and the cuffs of a different hue, each of the numerous varieties of seal affording a peculiar skin, which enables them to arrange the most opposite and glossy colours in the same habit; and at the parts of the body where it is necessary to have protection from cold there are no seams, therefore no crannies for the entry of the weather. In order, however, to unfold and fully appreciate the ingenuity of the people in this respect, the dress must be turned inside out, and personally inspected.

The coats are of three kinds, one for the winter, one for the summer, and one as an over-all in wet weather, and in shape somewhat resemble a shirt without its front opening, with a large hood attached, which is drawn over the head at pleasure. This is bordered with the white fur of the deer, and thus presents a lively contrast to the dark face which it encircles. The front or belly part of the coat is cut off square with the upper part of the legs; but behind, it is formed into a broad skirt, rounded at the lower end, which reaches to within a few inches of the ground. Many of the jackets, and particularly those of the females, are lined with the skins of birds.* The lower edges and tails of the dresses are in some cases bordered with bands of fur of an opposite colour to the body, and it is a favourite ornament to hang a fringe of little strips of skin beneath the border, which has a very pleasing appearance. The hood of the coat worn by the women is comparatively of immense size, which, as well as a covering for the head, answers the purpose of an infant's cradle for two or three years. At the shoulders is a wide bag-like space to afford room for the child, and to facilitate its removal from the hood to the breast without taking it out of the jacket,† and in front, instead of

* Kotzebue.

† Parry.

being square, it terminates in a rounded projection which extends about half way down the leg. The difference between the summer and winter coat generally consists in the one being formed of seal and the latter of rein-deer skin ; but every variety of fur is occasionally worn ; for instance, at Prince William Sound, the natives were found by Captain Cook wearing sea-otter, fox, racoon, martin, seal, and water-fowl skins, the former being most common. At Schismareff Inlet, the skin of the rein-deer and dog was the prevailing material ; at Regent Inlet, that of the Polar bear ; at Regent Bay, both of the bear and the dog ; and at Melville Peninsula, of the rein-deer only.

The over-all coat termed *Kamlaika*, which answers most effectually the purposes of a “ *Mackintosh*,” is very ingeniously made of seal or walrus-gut, or parchment skin cut into strips of an inch broad, and most skilfully sewed together. It effectually protects the fur clothes from rain or sea-spray. According to Egede, it is worn by the natives of Greenland between two jackets ; and Ellis, by the inhabitants of the Savage Islands next the skin. The breeches of fur, tied tightly round the loins, reach a little below the knee, and hang loosely over the boots, which in the feet are moccasin-fashioned ; both articles of dress being composed of rein-deer skin in winter, and seal-skin in summer,—the latter soled with the tough hide of the walrus, to protect them from the rough ground. As with the jacket, so with the boots worn by the women ; they are made to suit the wearers’ particular occupations, and are, without dispute, the most extraordinary part of their equipment. They are so large as to resemble leather sacks, and give a most deformed, and, at the same time, ludicrous appearance to the whole figure. The bulky part is at the knee, and the upper end is formed into a pointed extremity, which covers the front of the leg, and is secured by a button or knot within the waistband.* These capacious pouches are used as pockets in the ordinary sense, and as temporary beds for infants ; and, when in the vicinity of white men, as receptacles for stolen goods. The mittens in common

* Ellis.

use are of deer-skin, with the hair inside ; but, in fact, every kind of skin is appropriated to this necessary part of the winter gear. The natives of Behring Straits skin the paw of the bear, and wear it as a glove.

Besides the differences I have mentioned between individuals of the same tribe, there are others between tribe and tribe. At the River Clyde and Regent Bay, the man's jacket behind is quite straight, while before there is a sort of scollop in the centre. To the westward of Mackenzie River, a skirt is worn before as well as behind ; and at the Coppermine River, the tail of the woman's jacket is not more than a foot long.* A wooden cap, carved to resemble the bear or the seal, or, in fact, any animal of which they may be in search, is worn to the westward of the Mackenzie, in order to facilitate their approach to within gun-shot.† A cap made of the skin of the tail of the buffalo is worn in the summer to keep off the musquitoses.‡

At Labrador, the women's boots, instead of being looped up to the breeches, are " holden," says Sir Martin Frobisher, " from falling down about their feet by a piece of bone placed within them for their whole length ;"§ according to Mr Henry Ellis, they have an additional piece of whalebone to keep them wide at the top ; and at Lawrence Island and the river Clyde, they are worn close to the leg like those of the men. The Esquimaux of Prince William Sound dispense with the hood to the jacket, and wear a high truncated conic cap made of straw, and sometimes of wood. At the Savage Islands, Southampton Island, the River Clyde, and occasionally Prince William Sound, the women, instead of breeches, wear little thigh wrappers, which form but a very imperfect covering, and is the cause of their frequently getting frost-bitten ; yet they are so wedded to custom, that they will not add one inch to the established length. A tippet covering the shoulders, cut from the white part of the deer-skin, is occasionally worn by some of the younger persons as an ornament. The girdle worn round the waist is frequently ornamented with

* Cook.

† Sauer.

‡ Ellis.

§ Frobisher.

the bones, teeth, or nose of the fox or wolverine, or the ears of the rein-deer, hanging in pairs to the number of twenty or thirty, trophies of the skill of the hunter to whom the wearer is allied, and the same ornaments are attached as a fringe to the lower parts of the jackets. To the drawing-strings of the women's breeches, which are of greater length than those of the men, and made to hang down on one side, are frequently appended as ornaments, a grinder or two of the musk-ox, a piece of carved ivory, a small ball of wood, or perforated stone. At Schismareff Inlet, the men ornament the ends of these strings with a tuft of hair, the wing of a bird, or the tail of a fox; and as they do not take the precaution to turn the string on one side, as is usually the case, it dangles behind as they walk, and gives them a very ridiculous appearance. Captain Beechy thinks it probable, that it was this feature that gave rise to the report of the Tschuktchi of Northern Asia, recorded by Müller, that the people of America had tails like dogs.

The tent of the Esquimaux is merely a temporary summer habitation, formed generally of the skin of the walrus, cut into layers of about the thickness of a dollar, and extremely transparent and oily. The entrance or front faces the south, and as a protection to its back or northern point, seal-skins are placed. Beneath this is the sleeping place, alone distinguished by having several deer-skins spread on the bare ground. The seams of the covering are sewed together so as to be perfectly water-proof, and to the door-way are hung additional skins. One central pole of bones or broken spears, tacked together, gives height and support, and large stones or gravel, instead of pegs, size and shape to the tent; the diameter of the floor being ten, twelve, or fourteen feet, according to the number of inmates. From the top of the pole one or two skin lines are carried for security and steadiness, which, at Kotzebue Sound and Labrador, is rendered unnecessary; for in these localities, four poles are used, which, uniting at the top, and spreading at the base, give strength and shape to the tent.

The drawings made by Mr Henry Ellis and Dr Richardson of the tents observed by them at Hudson Bay and the

Polar Sea, agree with those of Kotzebue Sound* and Labrador,† except in the projection of the poles above the skins. Sir Edward Parry states this to be the fact at the River Clyde ; and we may infer, therefore, that Mr Henry Ellis and Dr Richardson are right, although they have made no allusion to this peculiarity in their respective narratives.

Egede and his commentator Crantz inform us, that the natives of Greenland, who cover their tents wholly with seal-skin, form the entry with seal-gut, which, from its transparency, answers the purpose of a window, a contrivance unnecessary with the highly translucent walrus skin. The tents sometimes contain two families, if they are related, or a double tent is formed by joining the mouths of two single ones, and making the opening on one side. Sir John Franklin discovered a tent to the westward of the Mackenzie, capable of holding forty persons, supposed to have been a trading establishment.

Besides the sleeping place, there is but little standing room in the tent ; as on one side is the larder,—an accumulation of flesh, blubber, bones, birds, eggs, &c., which lie at the mercy of the heels of all that enter ; but the careful tread of the inmates enables them to avoid that which the stranger in the land finds a difficult task. Sir Edward Parry's party were not so sure-footed, and the juices of these arctic luxuries, we are told, “ formed an intolerable filthy mud on the floor ;” and thus the Esquimaux had good reason to complain of their *soi-disant* more civilized brothers, whose awkwardness not only destroyed their carpet of earth, but deprived them of a portion of their very scanty winter store.

There are two kinds of boats in use, the caiak or man's boat, and the oomiak or woman's boat, which are admirably adapted to meet the circumstances in which they are placed. Division of labour is not, nor ever likely to be, established among this isolated family ; every man, therefore, is his own boatbuilder ; and it is no mean test of intelligence, to find it admitted by all, that the most practised civilized artisan

* Kotzebue.

† Frobisher.

could not possibly surpass them, either for symmetry or execution. The caiak was first described by William Baffin, who, while a youth, wrote the Account of James Hall's Voyage of Discovery in 1607, and whose subsequent career entitled him to have a very considerable bay of the Atlantic named after him. The length is from 16 to 20 feet, and the breadth at the centre from a foot and a-half to 2 feet, and the depth about 1 foot, the head and stern gradually inclining to a point from the centre ; it has, therefore, been very justly compared, in shape, to a weaver's shuttle. The bottom is rounded, and has no keel. Twenty-two little beams or cross pieces keep the frame on a stretch above, and two strong battens run, one from the stem and the other from the stern, towards the centre, where they are attached to a hoop of bone or wood, of a sufficient size to admit the body. The frame is entirely covered, with the exception of a circular hole in the centre, with fresh dressed seal or walrus parchment, and, when complete, it weighs about sixty pounds, which, by the form of the rim, can be carried on the head without the assistance of the hands.

There is a difference in the form of the caiak, according to the *locale* of the people, which lies in the elevation and shape of the rim, and in the greater or lesser curvature of the extremities. Throughout Esquimaux land, comfort *versus* custom is the motto of some few of the inhabitants in relation to the rim, and instead of being of a uniform height, it is raised at the back, the better to support the trunk of the body. At Prince William Sound, according to Captain Cook, the bow curves somewhat like the head of a violin, a peculiarity of form which answers for one figured by Mr Henry Ellis as in use at Hudson Bay. This is, however, doubtful, for in Captain Cook's caiak we have the letterpress, and in that of Mr Henry Ellis the figure alone to guide us. The caiak of Greenland has a knot of ivory at each end, to protect the sharp point of the extremity ; it is possible, therefore, that the curvature described by Cook and Ellis had a protective use.

At Prince William Sound the caiak is frequently built with

two,* and even three,† circular openings, so as to hold two or three men, in which instances a single, instead of the usual double paddle is used ; and it is worthy of remark, that Thorwold, who fell mortally wounded on the eastern coast of Greenland, in 1003, whilst leading a most uncalled for and brutal attack on this peaceful nation, states that the boats there held three persons. If this fashion was at the time prevalent, which is likely from the psychological history of the people, it was not so in 1576.‡ Necessity frequently obliges the Esquimaux to lash together various little scraps of wood, ivory, and bone, for paddles,§ but when wood is at hand they are well formed, and the broad blades neatly shod with bone, to enable them to bear the concussion of the ice.

The oomiak, called baidar at Ochotsk and Kamtschatka, is from 20 to 25 feet long, by 8 broad, and is capable of accommodating twenty persons. At Hudson Straits and Greenland it is navigated by women, and at the north-west corner of America by men, the women occasionally assisting. The one is of superior workmanship, and is propelled by men with single paddles, the rowers facing the bow ; the other by women with rudely shaped oars, resembling a spade at the water end, the rowers facing the stern. These family boats all agree in the general framework, and in being covered with seal or walrus skin, but they vary in form. They are not in use at Regent Inlet and Melville Peninsula. The oomiak of Hudson Straits and Greenland is flat-sided and flat-bottomed, about three feet high, and nearly square at the bow and stern, and contains from five to six seats secured to the gunwales by thongs, and that of the north-west coast is sometimes pointed at the bow and stern, and at other times at the bow only. The sail of the oomiak is what sailors call lug-shaped, and is formed of walrus gut sewed together with great neatness, in breadths of about four inches, and weighs only three pounds and three quarters. The mast, which is placed well forward, is made of wood, and has a very neatly formed ivory sheave for the halyards to run on. Considerable taste and attention is bestowed on the bow and stern of

the oomiak ; but the Esquimaux more particularly prides himself in the neat appearance of his caiak, and has a warm skin placed in its bottom beneath the rim for a seat. The dexterity with which it is rowed, the velocity of its way, and the extreme elegance of its form, renders an Esquimaux, when sitting independently, and urging his course towards his prey, an object of the highest interest ; and it is really wonderful that in so frail a bark he can defy the raging storm, and give battle to the polar bear and the mighty monsters of the deep.

Captain Cook has informed us, “ that every thing the Esquimaux have, is as well and ingeniously made as if they were furnished with the most complete tool-chest ; and that their sewing, plaiting of sinews and small work on their little bags, may be put in competition with the most delicate manufactures found in any part of the known world. In short, it appears that their invention and dexterity in all manual works, is at least equal to that of any other nation.” Let us see what are the tools they work with, and proceed to weigh the opinion Captain Cook has so strongly expressed. A hand chisel made of stone, copper, or ivory, of five or six inches long and about two broad, bevelled away at one end, and fixed in wood or bone handles, is in pretty general use.* This primitive mortise chisel is frequently lashed to the end of a piece of wood about twelve or fourteen inches long, in such a manner as to act like an adze,† and made almost after the manner of that of Otaheite,‡ which from its beauty finds a place in the drawing-room of the rich. Captain Lyon found a hatchet of English manufacture among the Esquimaux of Melville Peninsula thus mounted, and the shaft was scooped out in such a way as to allow the hand to fit it, each finger having its particular place. The knives used by the men are of two kinds ; the one is made of the tusk of the walrus, cut or ground sufficiently thin for the purpose, and as it retains the original curve of the tusk, it resembles the little swords which the English child plays with as a toy ; the other is of copper,§ or iron,§ triangular in form, and is let into a handle

* Richardson, Beechy, Hearne.

† Hearne.

‡ Cook.

§ Hearne.

§ Parry.

of wood or horn a foot long, to which it is secured by rivets or thongs. A knife of this description, found by Hearne at the mouth of the Coppermine River, was made of copper and heart-shaped, while one discovered by Sir Edward Parry at Melville Peninsula, was formed of iron and triangular. The gallant officer is of opinion, that the Esquimaux are probably indebted to an indirect communication with our factories in Hudson Bay for this form. The fact, however, of Hearne having found the same kind of knife at the Coppermine River, of which Sir Edward Parry was not perhaps aware, would appear to establish it as an invention of their own. The woman's knife exactly resembles that used by our cheese-mongers, which renders a particular description of it unnecessary. A sort of saw, used instead of a knife for cutting blubber, was found on the eastern coast of Greenland, by Captain Graah; it consisted of a lance-formed piece of fir, along the edges of which were inserted rows of sharks' teeth, which were secured by small nails of bone. This instrument, he adds, was formerly made use of on the west coast. Thus much of the contents of an Esquimaux tool-chest.

Fotherby, in 1615, was the first to make mention of the Esquimaux sledge, and that it was "shod or lined with bones," and Captain Luke Fox, in 1631, was the first to describe it; but we are indebted to Captain Cartwright, in 1770, for entering minutely into its construction. "The sleds the Esquimaux make use of," says Captain Cartwright, "are made of two spruce planks, each 21 feet long, 14 inches broad, and 2 inches thick, which are hewn out of separate trees (because they are not acquainted with the use of the pit-saw); they are placed collaterally with the upper edges at the distance of about a foot asunder; but the under edges are somewhat more, and secured in that position by a batten 2 inches square, which is placed close under the upper edges. The fore-ends are sloped off from the bottom upwards, that they may rise over any inequality in the road. Boards of 18 inches long are set at the upper edges of the sled, 3 inches asunder, to place the goods upon, and to accommodate the driver and others with a seat. The under edges are shod with the jaw-bone of a whale, cut into lengths of 2 or 3 feet, half an inch

thick, and are fastened on with pegs of the same. This shoeing is durable, and makes them slide very glibly. The wood work is sewed together with split whalebone. A couple of holes are bored through the fore ends of each plank, in which are inserted the two ends of a strong short thong, made out of the hide of a sea cow, and secured by a knot, and to the middle part of the thong a separate one is fastened from each dog."

In 1631, wood must have been more plentiful than in Captain Cartwright's time ; for Captain Luke Fox not only represents the side boards of the sledges to have been 4 inches thick, but informs us that, by robbing the graves, which were roofed with the sledges of the departed, after Indian custom, he obtained a boat-load of firewood in a single sacrilegious act. At the River Clyde, the sledges are made altogether of bone, the right and left jaw-bones of a young whale forming its sides, and the ribs of the animal the cross pieces, and for the back are placed rein-deer horns in an upright position.* Bone sledges are also in use at Schismareff Inlet† and Regent Bay.‡ At Regent Inlet the sledge is formed of a " number of salmon, packed together in the form of a cylinder about 7 feet long, and wrapped up in the skins taken from the canoes, which now cease to be of use ; when well corded with thongs, two of these cylinders are pressed into the shape of the runners, and having been left to freeze, are secured by cross bars made of the legs of the deer or musk-ox, so as to form the bottom of the sledge ; the bottom of the runner is then covered with a mixture of moss, earth, and water, which soon freezes to the depth of 2 inches, after which comes the final process of plaiting the surface. The operator takes some water in his mouth, and when somewhat mixed with saliva, it is deposited on a bear skin, which is then gradually rubbed over the runner as by a brush, till a coating of half an inch thick is produced, which has a more than usual degree of tenacity, and is more slippery than the ordinary material. These carriages travel much more lightly than those shod with iron ; but as they cease to be of use as

* Parry.

† Kotzebue.

‡ Ross.

soon as the thermometer rises above the freezing point, they are taken to pieces, the fish being eaten, and the skins converted into bags, while the bones are reserved for the dogs.”* In every instance the sledge is shod with pieces of hard bone which can be replaced when worn out.

The skin of the walrus, during the coldest part of the winter, is often manufactured into runners, for, when hard frozen, it resembles an inch board, with ten times the strength. Another ingenious contrivance is, the casing of moss and earth in seal skin, so that, by pouring a little water, a round hard bolster is easily formed. Across this kind of runner, there is the same arrangement of bones and sticks on the upper part, and the surface which passes over the snow is coated with ice, by mixing snow with fresh water. A rough piece of walrus hide, shaped like a tray or a flat slab of ice, hollowed like a bowl, for trifling purposes, is frequently used.†

In a country where the pliant twig holds no place, and where frequently driftwood is so scarce as to leave it destitute of that important article even for fuel, it is indeed an interesting inquiry to determine the means by which the Esquimaux has supplied himself with a bow. When formed of one piece of wood, the bow is of the ordinary make, strengthened on the back with 100 or more of small plaited or twisted sinews,‡ which, to use the words of Sir Martin Frobisher, are “not glued to, but fast girded and tied on.” The Esquimaux of Behring Straits bestow much care in giving the bow the proper form, and for this purpose they wrap it in shavings soaked in water, and hold it over a fire for a time. It is then pegged to the earth in the form required. By the assistance of the sinews at the back, the bow preserves its elastic power; and, by slackening or tightening them, it is rendered weak enough for the child, or strong enough for the most powerful man;§ and when “fast girded,” it causes the implement, when unstrung, to turn the wrong way. They have also the power of altering the length of the bowstring to their pleasure, by twisting the several strings, often of fifteen or twenty plaits, of which it is composed.

* Ross. † Parry, p. 206. ‡ Egede, Parry, Lyon, Franklin, Beechy.
§ Cartwright.

Two varieties of form and construction have been found amongst the natives of Hudson Straits. The one has been described and figured by Mr Henry Ellis; and a specimen of the other is in my possession. Sir Edward Parry did not meet with either of these bows among the natives of Melville Peninsula, although close neighbours to those of Hudson Straits. The bow met with by Mr Henry Ellis, "was made of three pieces of wood, each forming a part of the same arch, very nicely and exactly joined together." The bow in my possession differs from that of Mr Henry Ellis, in being flat instead of arched in the centre, and having a small piece of wood bound with fish-skin to the back part of the junction of the two curved extremities with the central flat portion, and is composed of five pieces of wood. At Melville Peninsula, for the want of wood, the horn of the musk ox, thinned horns of deer, and other bony substances are used. To protect the wrist from the abrasion which would ensue from frequent use, the Esquimaux of Behring Straits buckle on a piece of ivory about three or four inches long, hollowed out to the wrist, or a guard made of several pieces of ivory or wood fastened together like an iron-holder. The bow-string is, moreover, in contact with about a foot of the wood at each end, and, when used, makes a report fatal to secrecy; their more warlike neighbours are careful to muffle these parts with fur.* To make the bow draw stiffly, they dip it in water, which causes its back and string to contract, and creates a greater impetus. Sir Martin Frobisher informs us, that the bows are three feet long; Captain Lyon adds six inches to that length; and the one in my possession measures five feet three inches. It is used in the horizontal position. Lieutenant Edward Chappel must have been the dupe of some Israelitish Esquimaux, or he would scarcely have pronounced "the whole fabrication of the bows and arrows not to surpass the workmanship of an English school-boy." Specimens of the industrial arts of the Esquimaux were presented by Lieutenant Chappel to the Library of the University of Cambridge.

* Beechy.

The arrows are short, light, and formed without regard to length or thickness; "they are three pieces, nocked with bone and ended with bone, with those two ends and the wood in the midst; they pass not in length half a yard, or little more. They are feathered with two feathers, the pen end being cut away, and the feathers laid upon the arrow with the broad side to the wood, insomuch that they seem, when they are tied on, to have four feathers. They have also three sorts of heads to their arrows; one sort of stone or iron proportioned like a heart; the second sort of bone, much like unto a stopped head, with a hook on the same; the third sort of bone, likewise made sharp on both sides, and sharp pointed. They are not made very fast, but lightly tied, or else tied in a nocke, that upon small occasions the arrows leave these heads behind them, and they are of small force except they be very near when they shoot."* The bow, when of the ordinary make, and a few arrows, are carried in a neatly formed seal-skin case; and attached to the side, in a little bag, is a stone for sharpening, and some spare arrow-heads carefully wrapped up.

Their spears are of various kinds, the difference chiefly consisting in material, rather than form. The *kā-tě-lēēk*, with which the whale and walrus are attacked, is a large and strong handled spear, especially towards the middle, where there is a small shoulder of ivory securely lashed to it for the thumb to rest against, and thus to give additional force in throwing or thrusting it. The ivory point of this weapon is made to fit into a socket at the end of the staff, where it is secured by double thongs, in such a manner as steadily to retain its position when a strain is put upon it in the direction of its length, but immediately disengaging itself with a sort of spring, when any lateral strain endangers its breaking. This weapon, so far, displays little art or ingenuity; but an appendage called *siātškō*, consisting of a piece of bone three inches long, and having a point of iron at one end, and at the other a small hole or socket, to receive the point of the *kā-tě-lēēk*, is a masterpiece of art. Through the middle of

* Frobisher.

this instrument is secured the *ällek*, or line of thong, of which every man has, when sealing, a couple of coils, each from four to six fathoms long, hanging at his back. These are made of the skin of the ozuke as in Greenland, and are admirably adapted to the purpose, both on account of their strength, and the property which they possess of preserving their pliability even in the most intense frost. To the end of the *ällek*, when the animal pursued is in open water, they attach a whole seal-skin, inflated like a bladder, for the purpose of tiring it out in its progress through the water. The *akliak*, a lighter kind than the former, also ivory-headed, with the *siatko* attached, is used for the large seal, and has a bladder fastened to it, and a loose head with a line attached; this being darted into an animal, is instantly liberated from the handle which gives the impetus. The *oonak* used for the small seal is of the same make as the former, but wants the bladder.

When a seal is seen, the *siatko* is taken from a little leathern case, in which, when out of use, it is carefully inclosed, and attached by its socket to the point of the spear; in this situation it is retained by bringing the *ällek* tight down, and fastening it round the middle of the staff by a slipknot, which may instantly be disengaged by pulling on the other end of the line. As soon as the spear has been thrown and the animal struck, the *siatko* is thus purposely separated, and being slung by the middle, now performs very effectually the important office of a barb, by turning at right angles to the direction in which it has entered the orifice. This device is, in its principle, acknowledged to be superior even to our barb; for the instant any strain is put upon the line, it opposes its length to a wound only as wide as its own breadth.

The *nuguit*, for striking birds, young animals, or fish, has two forms; the first has two prongs like a fork at the extremity, and three other barbed ones in the middle, diverging in different directions, so that if the end pair should miss, some of the centre ones should strike. The second has no diverging prongs in the middle, but three instead of two at the extremity, and may be termed, by way of distinction the trident spear. Sir John Ross, in his account of the

Esquimaux of Regent Inlet, describes the trident spear, "because it was different from any of which he had read." Now Sir Martin Frobisher has accurately described this spear, comparing it to "our toasting irons, but longer," as well as Captain Lyon; and it is difficult to understand that the latter gallant officer's admirable description could have escaped Sir John Ross's attention. When employed for striking birds, to give these spears additional velocity, a throwing-stick is used, which is constructed of a flat board of about eighteen inches long, having a groove to receive the staff, two others, and a hole for the fingers and thumb, and a small spike fitted for a hole in the end of the staff. Mr Henry Ellis has figured this singular instrument, and specimens of it were brought home by Captain Billings and Lieutenant Chappell.

The sling is in use amongst the natives of Labrador,* Hudson Straits,† and the Great Fish River Estuary,‡ and is very destructive in the hands of an Esquimaux, who directs it with great force and unerring aim. Amongst the minor implements of the chase are their fish-hooks, consisting only of a nail, crooked and pointed at one end, the other being let into a piece of ivory to which the line is attached; a piece of deer's horn or curved bone, only a foot long, used as a rod; a long bone-feeler for plumbing any cracks in the ice through which seals are suspected of breathing, and also for trying the safety of the road; a most delicate little rod, used as a float, of bone or ivory, of the thickness of a fine knitting needle, and about a foot long, having at the lower end a small knob, and at the upper a fine piece of sinew tied to it, so as to fasten it loosely to the side of the hole; small ivory pegs or pins to stop the holes made by the spears in the animal's body, in order that the blood, a great luxury to the natives, may be saved; and an instrument, shaped something like a shoe-horn, with four holes at the small end, communicating with a trough that extends along the middle, and widens as it nears the broad part. This is used to procure blood from the dying animal, by inserting the end with the holes into the wound,

* Frobisher.

† Ellis.

‡ King.

and placing the mouth at the opposite end of the trough, to receive the liquid as it flows.

In order to limit their observation of distant objects, and to protect themselves from snow-blindness, occasioned by the reflection of the sun's rays from off the ice-flakes of snow, they wear an eye-shade of wood or ivory, or of both combined. On the inside it is hollowed to receive the bridge of the nose, on which it rests in front, and to give free play to the eyelids, while on the outside it is convex, and longitudinally and very narrowly divided for the purposes of vision. Two strings are attached to it to confine it in its place.

To protect themselves from the Russian traders, the natives of Prince William Sound and Schismareff Inlet, wear underneath their dress a jacket or coat of mail* made of thin laths, bound together with sinews, which make it quite flexible, though so close as not to admit an arrow or dart. It only covers the trunk of the body, and has been compared by Captain Cook to the stays of civilized life. According to Sauer, it has a flap before, reaching down their thighs, but so made as to rise or fall, and permit their sitting in their oomiaks: a similar flap hangs on the breast, which may be raised as high as the eyes. Straps fasten this armour on the shoulders, and strings tie it round the body on one side. At Schismareff Inlet, instead of wood, their coat of mail is made of eider drake skin.†

They have an ingenious contrivance for detaching fleas from the back, or such parts of the body as the hands cannot reach. This is a rib of a seal, having a bunch of the whitest hair of the deer attached to one end, and on thus rubbing the places which require it, the little animals stick to it, and from their colour are easily detected.

Almost all the uncivilized races have some notion of drawing, generally a representation of themselves, of the animals of the chase, and the implements used in their capture. Captain Beechy has described a picture drawn on one of their implements of the chase, by a native of Kotzebue Sound, which represented in one part a hunter in pursuit of

* Cook, Sauer.

† Beechy.

a herd of deer, in a stooping posture on snow-shoes ; in another his nearer approach to his game, and in the act of drawing his bow ; in a third, the act of throwing his spear at a seal, with an inflated skin as a decoy: the animal was placed upon the ice, the man lying on his belly, with a harpoon ready to strike it; in a fourth, the dragging a seal home upon a small sledge, and several oomiaks busy in harpooning whales which had been previously shot with arrows ; and thus, by comparing one with another, a complete insight into their habits was elicited. On the eastern coast of Greenland, Kœnick, a painter of repute among his colleagues, ornamented the walls of his house with figures cut out of black skins representing seals, walruses, bears, and Greenlanders, “ in which menagerie,” says Captain Graah, of the Danish Navy, who discovered them, “ he soon recognised himself.”* Captain Parry informs us, that Toolemak, a native of Melville Peninsula, learned himself to draw very fairly, by copying prints ; and Ayokitt’s productions were so curious and ingenious, as “ to determine Captain Lyon on treasuring them.” In the animals there was one striking peculiarity, which consisted in having both eyes on the same side of the head. Sacheuse, the interpreter to Sir John Ross’s first expedition, acquired the art to an extent which enabled him to make a drawing of the first interview of the exploring party with the natives of Regent Bay, which was a highly ludicrous scene, and, from its value, engraved as an illustration to the Narrative of that Expedition. Sir John Franklin’s interpreter, Augustus, was accustomed to spend whole days in looking over a collection of portraits, amongst which was one of the Duchess of Kent, the mother of our Sovereign. The representation so won his heart, that in the list of presents which he furnished to be forwarded to him from England, was that of “ a wife like the Duchess of Kent.”

The art of carving is universally practised,—its state of perfection keeping pace with our progress along their migration from east to west. Carvings in imitation of the human form were found by Captain Graah on the eastern

* Graah, 131.

coast of Greenland of a very rude character.* We no sooner, however, reach the eastern coast of America, than we find models of men, women, and children, of birds, beasts, and fishes, and of every kind of implement and culinary utensil, executed in a masterly style. An Esquimaux woman, without her dress, obtained from the Esquimaux, shews a proficiency in anatomy as complete as the learned professor of the Royal Academy could possibly wish his most accomplished pupils to attain; and one with the dress on, that they can chisel the drapery with equal truth. "An ivory fish," purchased by Captain Lyon, "neatly formed, and about three inches long, had the eyes made of small lumps of iron pyrites."† Ivory chains, most ingeniously cut out of solid pieces of ivory, were found in the possession of the Esquimaux of Behring Straits, each link being separately relieved, and sometimes twenty-six inches in length.‡ For what purpose they were used, Captain Beechy knew not; but part of the last link was frequently left solid, and formed in imitation of a whale; "and these chains being strong," he adds, "may in some way or other be appropriated to the capture of that animal." The models of men and women are generally dressed in clothes, which are made with seams and edgings precisely similar to those in daily use. The ivory of which they form their models is cut by continued chopping with a knife, one end of the ivory resting on a soft stone, serves as a block. To smooth and polish the work when finished, a gritty stone is used as a file, and kept constantly wetted with saliva.

* Graah, 99.

† Lyon, 283.

‡ Beechy.